

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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September 21, 2010

Robert Cianciarulo
U.S. EPA
Office of Site Remediation and Restoration
1 Congress Street
Suite 1100 (HBO)
Boston, MA 02114

RE: Groundwater Use and Value Determination
Olin Chemical Corporation

Dear Mr. Cianciarulo:

Enclosed please find the Groundwater Use and Value Determination for the Olin Chemical Corporation prepared by the Department of Environmental Protection (MassDEP). The Determination was conducted by the DEP pursuant to the Memorandum of Agreement (1998) between the U.S. Environmental Protection Agency and the MassDEP.

Should you have any questions, please contact Joe Coyne at 617-348-4066.

Sincerely,

A handwritten signature in cursive script, reading "Jay Naparstek".

Jay Naparstek
Deputy Division Director

e-file: 100813Use&Value OLIN

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>



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GROUNDWATER USE AND VALUE DETERMINATION
Olin Chemical Corporation Superfund Site

September 2010

Consistent with the Environmental Protection Agency's (EPA) 1996 Final Ground Water Use and Value Determination Guidance, the Department has developed a "Use and Value Determination" for the groundwater impacted by the Olin Chemical Corporation Superfund Site (the "Site"). The purpose of the Use and Value Determination is to identify whether the aquifer at and in the vicinity of the Site should be considered of "High", "Medium", or "Low" use and value. In the development of its determination, the Department has considered the criteria contained in the Guidance, as well as the criteria for groundwater classification as promulgated in the Massachusetts Contingency Plan (MCP). The classification contained in the MCP considers criteria similar to those recommended in the Use and Value Guidance. The Department's recommendation supports a high use and value for the Site area groundwater. An explanation for the determination is outlined below.

For the purpose of this Determination, the term Site will include the Olin property as well as additional areas where contamination has come to be located. The groundwater under evaluation is defined as the groundwater beneath the Site and the surrounding area as shown in the attached figure.

The Olin property covers approximately 50 acres of land in Wilmington, Massachusetts. Contamination has been detected at the Site in various media including groundwater, soils, sediments and surface water. Numerous organic contaminants (N-nitrodimethylamine, N-nitrosodiphenylamine, bis-2-ethyl hexyl phthalate and trimethylpentenes) and inorganics contaminants (chromium, ammonia, sodium, sulfate, and nitrate) have been consistently detected in groundwater. In June 1990, an Aquifer Protection Study was conducted by IEP, which included the delineation of water supply Zone II areas in Wilmington. A Zone II is defined as an area of an aquifer that contributes water to a well under the most severe pumping and recharge conditions that can be reasonably estimated.

Also identified in the Aquifer Protection Study was the presence of a groundwater divide that runs roughly east/west across the northern portion of the Site. This divide separates the Ipswich Drainage Basin to the north from the Aberjona River Watershed to the south. The area to the north of this groundwater divide (in the Ipswich Drainage Basin) is classified as Zone II.

There are three MCP groundwater classifications at the Site; GW-1, GW-2, and GW-3. In general, areas that are located within a Current or Potential Drinking Water Source area are classified as GW-1. This includes areas that fall within a delineated Zone II. GW-2 classification occurs where there is a potential for migration of vapors from

groundwater to occupied or planned structures. The classification applies to locations where groundwater has an average annual depth of 15 feet or less and where there is an occupied or planned building or structure within a 30-foot surface radius of the groundwater. All other areas are considered GW-3. Areas within the delineated Zone II across the northern portion of the Site are classified as GW-1 as a current drinking water source area. Additionally, areas within 500 feet of any private wells are also considered GW-1 areas. Active private potable wells are located on Cook Street in the vicinity of the site. The remainder of the Site groundwater is categorized as GW-2/GW-3. Roughly 1500 feet to the south is an area also classified as GW-1 as a high yield aquifer and a Potential Drinking Water Source Area (See Attached Resource Map).

Because a portion of the Site falls within a GW-1 area, (the Zone II to the north) and the close proximity to private drinking water wells to the southeast and the GW-1 Potential Drinking Water Source Area to the south, and in light of the factors contained in EPA's Final Ground Water Use and Value Determination Guidance, the Department supports a high use and value for the Site area aquifer (See Attached Table: Groundwater Use and Value Factors) .

For the purposes of the risk assessment of the Site area groundwater, the groundwater risk evaluation for the Site should include, but is not limited to, the following:

Human Health:

- a) Active and Potential drinking water
- b) Vapor seepage into buildings,
- c) Use of the water in industrial processes,
- d) Excavation into groundwater (i.e., worker exposure),
- e) Discharge to surface water (and the consequential effects of the discharge--i.e. wading scenarios, recreation, fishing).

Groundwater Use and Value Factors				
Factors	High	Medium	Low	Comments
1. Quantity	X			High to medium yield on the northern portion of the site; low yield on the southern portion of the site.
2. Quality	X			Groundwater in the vicinity of the site is used for private potable drinking water.
3. Current Public Water Supply Systems	X			There are no public water supply wells onsite but there is a Zone II located on the northern portion of the property.
4. Current Private Drinking Water Supply Wells	X			There are private drinking water wells in the proximity of the site.
5. Likelihood and I.D. of Future Drinking Water Use		X		There are potential water supply development areas to the north and the south of the site.
6. Other Current or reasonable Expected Groundwater Use(s) in Review Area	X			There are private and irrigation wells in the vicinity of the site.
7. Ecological Value		X		Surface water on the site flows to the south ditch which flows off property to the East Ditch to the New Boston Drainway then to Halls Brook.
8. Public Opinion		X		Public comment has indicated concerns over groundwater contamination and loss of public wells due to contamination.

MassDEP - Bureau of Waste Site Cleanup

MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Name:
Olin Chemical NPL Site
Wilmington, MA
RTN:
NAD83 MA Coordinates:
228556mE, 919523mN

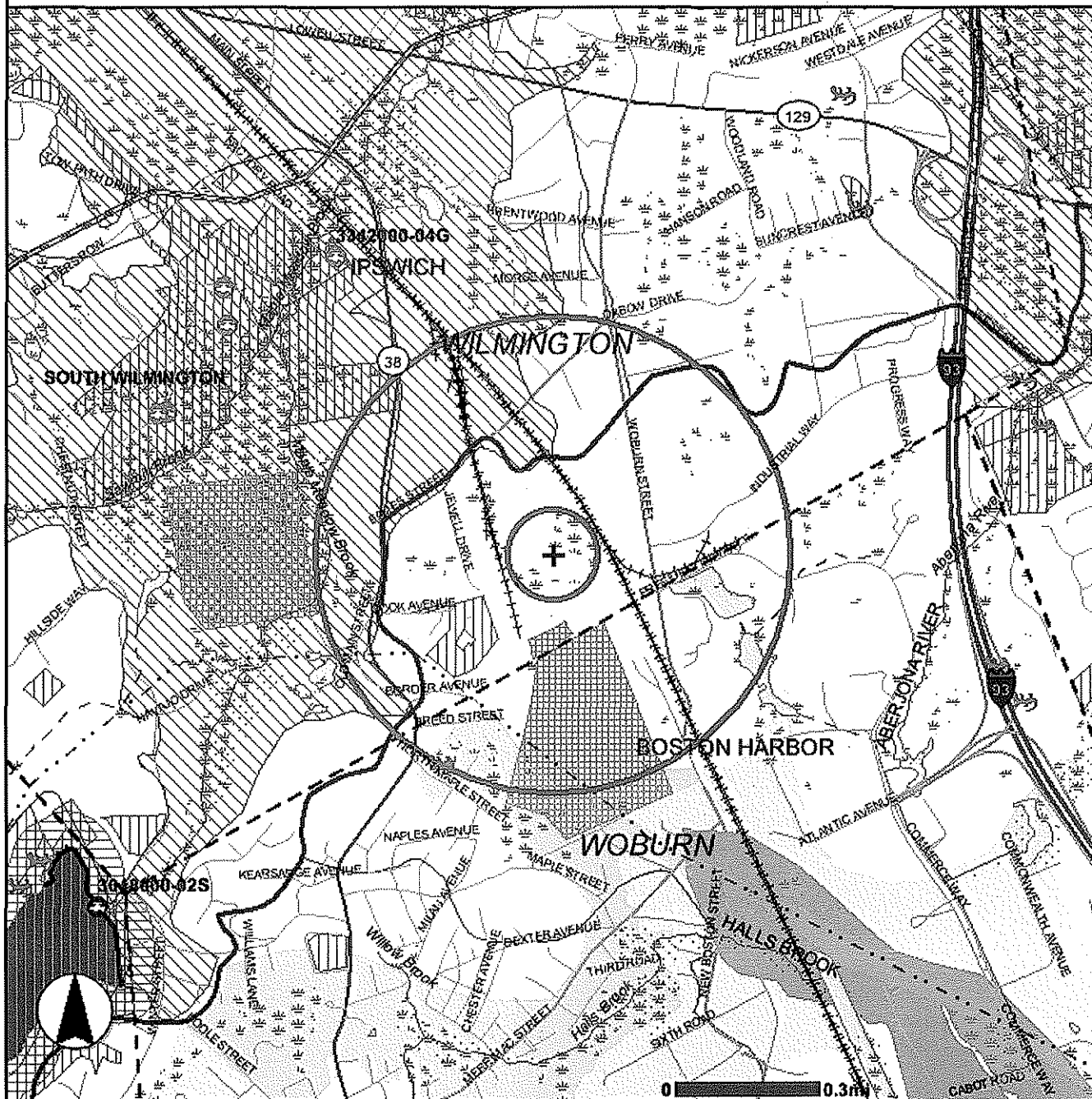
September 16, 2010



The information shown on this map is the best available at the date of printing. For more information please refer to www.mass.gov/mgis/massgis.htm



MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source.....

Non Potential Drinking Water Source Area: Medium, High (Yield)....

PWS Protection Areas: Zone II, MWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

NHESP: Est Rare Wetland Habitat, Certified Vernal Pool ...

DEP Permitted Solid Waste Landfill.....

Olin Chemical Superfund Site Wilmington, Massachusetts



Rail Lines

- Active Rail Service
- - - Abandoned or Out of Service

Major Basins

Sub-basins

Public Water Supply Sources

- Community Groundwater Well
- Surface Water Intake
- Emergency Surface Water Intake
- Non-Community Groundwater Well
- Proposed Well

Non Potential Drinking Water Source Area

- High Yield
- Medium Yield

Aquifers

- High Yield
- Medium Yield

Wellhead Protection Areas

- Zone IIs
- IWPAs

Surface Water Protection Areas

- Zone A
- Zone B
- Zone C

Towns

- Olin Property Boundary (approximate)

Note: Public Water Supply Wells shown on map are now closed.

DATA SOURCES:

All Data from MassGIS & MassDEP
Color Orthophoto - MassGIS, 2005

